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SIGNAL APPARATUS.

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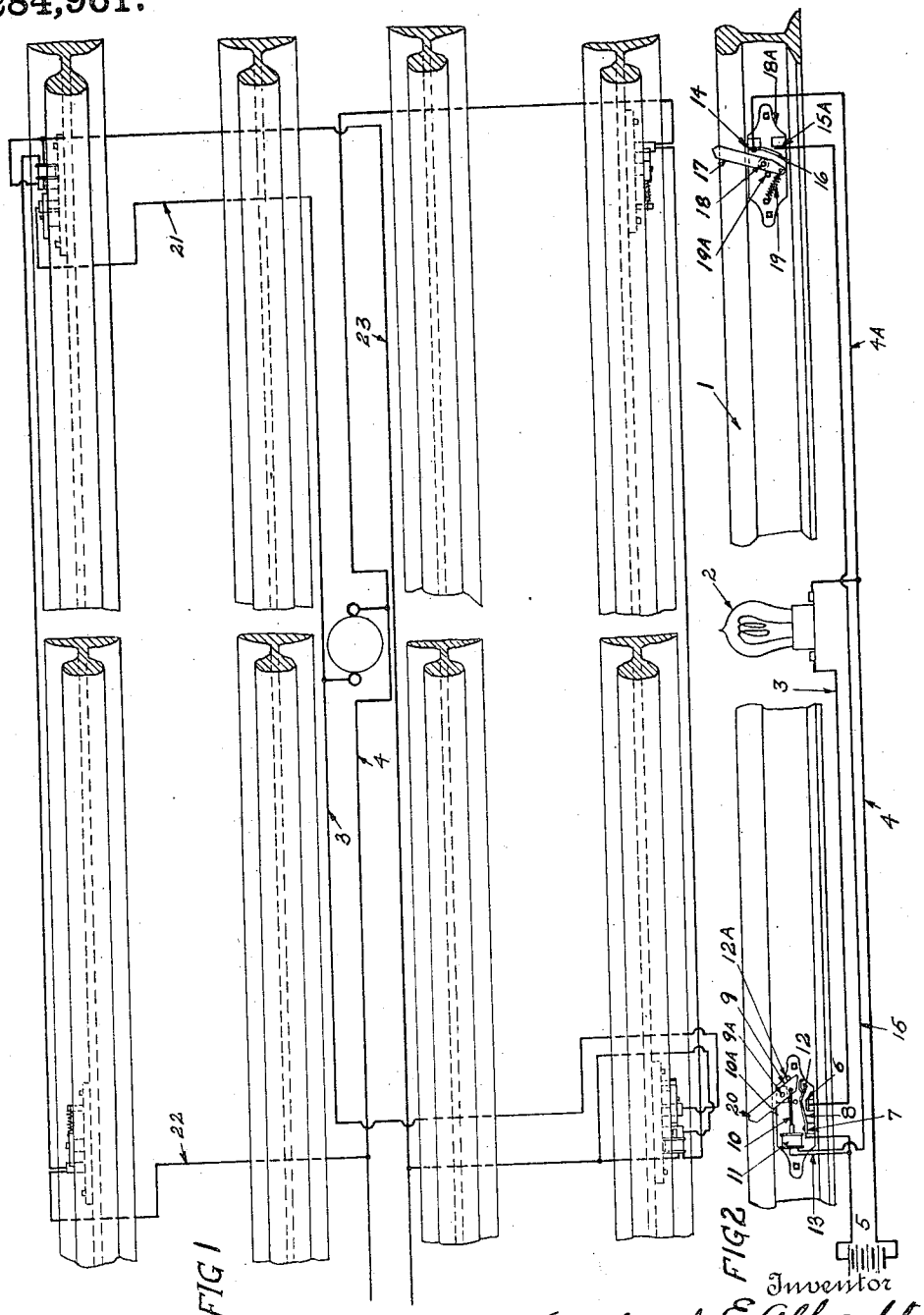
1,284,961.



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SIGNAL APPARATUS.

1,284,961. Specification of Letters Patent. Patented Nov. 19, 1918.

Application filed October 19, 1917. Serial No. 197,393.

To all whom it may concern:

Be it known that I, FREDERICK E. ALBRECHT, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Signal Apparatus, of which the following is a specification.

This invention relates to signaling apparatus and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

The invention is particularly applicable to warning signals at highway crossings of railways.

The invention is illustrated in the accompanying drawings as follows:—

Figure 1 shows a plan view of a double track railway.

Fig. 2 a side elevation.

1 marks a rail of the track, 2 the signal light, and 3 and 4 the wires running to the light and forming an electric circuit, the wires leading to a source of electric supply as a battery 5. The lines 3 and 4 lead to the terminals 6 and 7 respectively. A spring switch plate 8 is arranged over these terminals and is adapted to close the circuit through these terminals when sprung into contact. A lever 9 pivoted at 9^a on a mounting 10^a secured to the track is adapted to operate against the plate 8 to close the switch. The lever has a rod 10 extending into the core of a solenoid 11 so that when current is passing through the solenoid it operates against the lever 9 and draws the lever toward the left operating upon the spring 8 and forcing it into contact to close the switch between the terminals 6 and 7. The spring has a detent 12 so that when the lever has reached its final position it is yieldingly locked in this detent. A stop 12^a is provided for limiting the movement of the lever.

The solenoid circuit comprises a wire 13 which runs to the wire 4 and a second wire 15. These wires run to the terminals 14 and 15^a. A spring plate 16 is adapted to bridge the terminals 14 and 15^a so as to close the circuit. The spring normally is out of contact so as to leave the switch open. A lever 17 is pivoted at 18 on a mounting 18^a secured to the track. The upper end of this lever is in position to be operated by the wheels of a passing train swinging the lower end of the lever toward the right so as to force the switch plate 16 into contact and thus close the circuit. It will be noted that the wire 4 which is extended to the terminal 14 by the branch 4^a and the wire 13 connecting with the wire 3 form a circuit through the battery so as to give electric energy. When the circuit through the terminals 14 and 15^a is closed the solenoid is energized and the switch plate 8 closes the primary or lighting circuit. This throws the upper end 20 of the lever 9 into position to be engaged by the wheels of a passing train. The lever 9 and the lever 17 are spaced a distance apart, the lever 17 being distanced from the crossing to throw in the signal light a proper interval before the arrival of the train and the lever 9 in position to turn out the light after the train has covered the crossing. A yielding stop 19^a is provided for the lever 17 and the spring 19 normally holds this lever against the stop putting the upper end of the lever 17 in proper position to be engaged by the wheels of a train.

A similar device can be connected with the same circuit from the opposite rail, or the same rail, to take care of trains running in the opposite direction. It will be noted that the lever 20 is normally below the level of the track and the yielding stop 19^a permits the swinging of the lever 17 so that the train passing in the other direction has no effect on the signal. A signal device, similar to the one shown is arranged on the other track in Fig. 1, the wires 21 and 22 being connected with the wires 3 and 4 of the signal circuit and the wire 23 being connected with the wire 15 of the secondary circuit. The apparatus is otherwise exactly the same as that shown in elevation in Fig. 2 except that the direction of the parts is reversed.

What I claim as new is:—

1. In a signal apparatus, the combination of a lighting circuit; a signal light in said circuit; a signal light circuit switch in said circuit; a solenoid for actuating said switch; a secondary circuit with which said solenoid is alone connected; a train actuated mechanism for closing said secondary circuit; and means actuated by the solenoid when closing the signal light circuit switch to throw the same into the path of a moving train, said means when actuated opening said light circuit switch.

2. In a signal apparatus, the combination of a lighting circuit; a signal light in said

circuit; a light circuit switch in said circuit; a lever for actuating said switch normally out of the path of a train and having a part adapted to be engaged by a train to open the switch; a solenoid operating on said lever to throw the lever into the path of a train whereby the train may operate said lever; a secondary circuit for energizing the solenoid; a secondary switch controlling the secondary circuit; a lever for actuating said switch adapted to be engaged by a passing train; and means for opening said secondary switch on the passing of the train.

3. In a signal apparatus, the combination of a lighting circuit; a signal light in said circuit; a light circuit switch in said circuit; a lever for closing said switch, said lever being normally out of the path of a moving train but being moved into the path of a moving train on the closing of said switch; means for retaining said lever in the position assumed in closing the switch; a solenoid for actuating the lever; a secondary circuit connected with the solenoid; a switch controlling said circuit; and a lever adapted to be actuated by a train for closing said last-mentioned switch.

In testimony whereof I have hereunto set my hand.

FREDERICK E. ALBRECHT.